

Suines migrations on Romania`territory during the Neolithic



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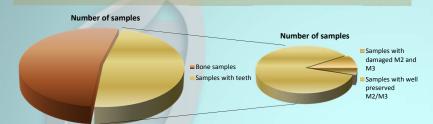
Zooarchaeological evidence have shown so far a gradually developing interest of humans in raising pigs during the Neolithic, which contributes also to a sedentary life.

This aspect is also present in Romania, where the frequency analysis for the domestic animal remains showed a higher prevalence of cattle, goats and sheep, opposite to the low percentage of pigs in the early Neolithic, and a reverse situation towards the Chalcolithic, when the pigs gain much more territory in human life.

The process of pig domestication is a very complex one, and scientists are still trying to answer to questions like when, where and how did it happen. As far as Romanian territory is concerned, the archaeogenetical evidence so far showed that the first domestic pigs were imported here starting the 6th millenium BC and only later, towards the Chalcolithic, European domestic pigs start to

Material

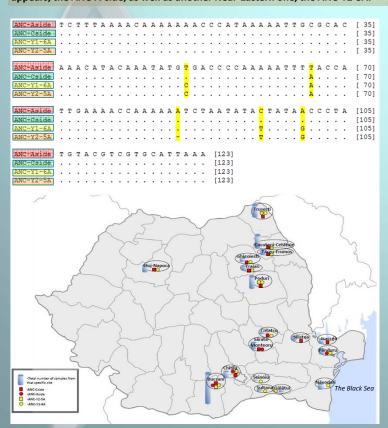
In this study were analyzed 105 samples from 18 different sites from the central and eastern parts of Romania, spanning a large period of time: 6000-3700 BC.



All samples were subjected to extraction protocols, PCR and sequencing reactions.

Results

For the periods of time and geographical area considered in this study, four haplotypes were identified, both in wild and domestic individuals. Apart from the previously mentioned ANC-Cside most in the wild individuals and ANC-Y1-6A in the domestics, towards the end of the Neolithic, the second European haplotype appears, the ANC-A-side, as well as another Near-Eastern one, the ANC-Y2-5A.



The spread of all haplotypes on Romanian territory and the number of samples from each site



Map with the archaeological sites

The paper presents some archaeozoologic and archaegenetics data about the suines (Sus domesticus and Sus scrofa) during the Neolithic. For the Neolithic settlements the high number of domestic pig remains emphasizes the sedentarity of these human communities. The frequency analysis for the pig remains show the fact that in the Early Neolithic time pig has a very small prevalence, which suggests the high mobility of these communities due to the need of providing food for cattle, goats and sheep. Towards the Chalcolithic, the number of pig remains begins to rise, which suggests a higher sedentarity for the communities of this period. Along the Neolithic the percentage of cattle decreases in the detriment of the other species, out of which the pig face the most obvious rise in percentage. Thus, while in the beginnings of the Neolithic the pig is sometimes absent or in low percentage (below 5% as number of identified remains), towards the end of this period will reach sometimes even 20-25%. The wild boar is a frequent species among the Neolithic samples. Ecologically, it is considered a forest animal, but it can be found in the grasslands, cane or the islets from the Danube Delta.

The evolution of swine breeding on Romanian territory, with the percentage difference between the number of domesticated individuals in the Early Neolithic compared to the Late Neolithic, is further explained by the genetic analysis. The studies we carried out on the mitochondrial DNA revealed for the Early Neolithic only the existence of the Near-Eastern haplotype ANC-Y1-6A among the domestic pigs in the Eastern Romania, which is consistent with the idea that in the early stages of farming in this geographical area, pigs were imported from the Near East. In the Late Neolithic, when the farming develops and the number of pigs rises, these will present a higher variety of haplotypes.

Apart from the ANC-Y1-6A Near-Eastern haplotype. appears another previously described haplotype, also with a Near-Eastern origin, the ANC-Y2-5A, together European with both haplotypes ANC-A ANC-C. archaeological sites the number of the ANC-Y1-6A Near-Eastern haplotype is still dominant and occurrence of the ANC-Cside European haplotype in pigs could only prove the introgression of European wild boar in the domestic stock of Near-Eastern origin. For a better understanding of trade directions and farming development in the Neolithic on Romanian territory, further analysis on more samples is required for the ANC-Y2-5A Near-Eastern haplotype, identified in few samples of both wild and domestic pigs, as well as for the second ANC-Aside European haplotype, identified in Romanian pigs, but absent in the wild boars from the same period of

time and geographical area.



The emergence of the ANC-Y2-5A Near-Eastern haplotype in time and space on Romanian territory



The emergence of the ANC-Aside european haplotype in time and space on Romanian territory